### TANGIBLE RESULT #5

# Provide an Efficient, Well-Connected Transportation Experience



MDOT will provide an easy, reliable transportation experience throughout the system. This includes good connections and world class transportation facilities and services.

#### **RESULT DRIVER:**

Phil Sullivan

Maryland Transit Administration (MTA)

#### TANGIBLE RESULT DRIVER:

Phil Sullivan

Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Sam Walters
Maryland Transportation Authority
(MDTA)

#### **PURPOSE OF MEASURE:**

To assess average wait time at facilities.

#### FREQUENCY:

Quarterly

#### DATA COLLECTION METHODOLOGY:

Verification of average wait times at facilities for services based on MDTA reporting the percentage of tolls collected via cash payment at toll facilities.

#### NATIONAL BENCHMARK:

N/A

#### PERFORMANCE MEASURE 5.1A

### Reliability of the Transportation Experience: Percentage of Tolls Collected as Cash

Customers expect limited congestion and minimal wait times, particularly at paid toll facilities. A decrease in this measure indicates more free flow traffic using electronic means of payment. Currently we are trending positively, as our measure has been decreasing over the past year.

As of Q3 CY2018 we are at 15.96 percent of tolls collected as cash. This is a decrease of 2.29 percent from Q3 CY2017. Cash tolls cause more congestion and longer wait times at toll facilities.

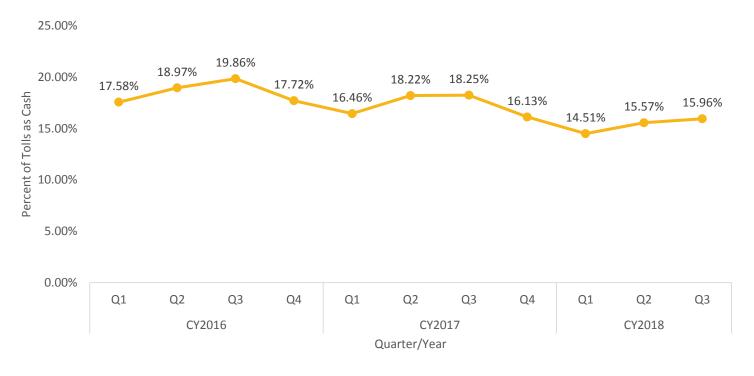
MDOT continues to market electronic toll collection.



#### **PERFORMANCE MEASURE 5.1A**

Reliability of the Transportation Experience: Percentage of Tolls Collected as Cash

Chart 5.1A.1: Percent of Tolls Collected as Cash for All Mixed Facilities Q1 CY2016-Q3 CY2018



#### TANGIBLE RESULT DRIVER:

Phil Sullivan

Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Jeffrey Gutowski

Maryland Port Administration (MPA)

#### PURPOSE OF MEASURE:

To assess average turn time at facilities to ensure an efficient transportation experience for our customers.

#### FREQUENCY:

Annually (in January)

#### DATA COLLECTION METHODOLOGY:

Verification of average turn times at port facilities for services.

#### NATIONAL BENCHMARK:

There is not a national benchmark. However, in researching through trade and industry publications and trucking associations, 45 minutes can be established as an efficient turn time.

#### **PERFORMANCE MEASURE 5.1B**

### Reliability of the Transportation Experience: Average Truck Turn Time per Container Transaction

This performance measure is important because customers of the Port facilities expect reasonable turn times to obtain needed services. The reliability of the transportation experience is assessed through average truck transaction turn times at facilities. This measure will allow MDOT to monitor the service provider and improve turn times at our container facility. The data will be reported and reviewed annually.

The MPA is reporting on container transaction turn time handled by trucks at Seagirt Marine Terminal by fiscal year. The gate turnaround time is determined by the accumulated time that each truck remains on the terminal to complete its transaction. The primary objective of the Port is to maintain industry leading turn times of 45 minutes or less. Turn times have increased in FY2017 from 30.7 minutes to 44.0 minutes per transaction. The increase is directly attributable to four factors:

- 1. The Panama Canal expansion allows for larger vessels to call at the facility.
- 2. Irregular schedules of these larger vessels contribute to vessel bunching.
- 3. An unexpected surge in container volume on average of 13 percent since January 2017 has stressed Seagirt's historical operating methodology, labor and equipment.
- 4.A change in the metric for applying this data. Prior to 2017, turn times were measured at the beginning of the business transaction to the end of said transaction, the industry term for this measurement is "pedestal to pedestal." It was requested by the trucking community for turn times to more accurately reflect the actual time a driver is waiting to be serviced; not just the drivers actual time at the terminal. With the implementation of RFID technology over the past year, turn times can now be measured from the time a truck passes through the first security checkpoint until it passes through the final security checkpoint prior to exiting the terminal. It is important to note when comparing to prior reporting periods that the time from the first security checkpoint to the processing center which begins the business transaction is approximately eight to ten minutes, and this time was not reflected in prior reports.

#### PERFORMANCE MEASURE 5.1B

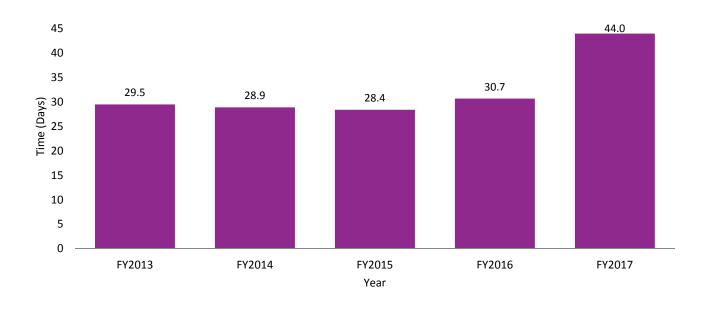
## Reliability of the Transportation Experience: Average Truck Turn Time per Container Transaction

Continual improvement of the trucker experience is important to MPA as well as the terminal operator. The terminal operator has implemented the following to improve the truck turnaround times through:

- 1. Streamlining gate processes, including implementation of RFID technology.
- 2. Terminal infrastructure investments to include opening of a second truck gate.
- 3. Extending gate operating hours in coordination with Customs and Border Protection (CBP) resources.
- 4. Deploying new technologies and expanding existing technologies including updating the NAVIS terminal operating system that is currently being installed.
- 5. Investing in new container handling equipment with the delivery of 6 new RTG (Rubber Tire Gantry) on January 28, 2018 to better service over the road.
- 6. Implementation of a port-wide chassis pool near the dock empty container yard and a new Terminal operating system.

Finally, maintaining active lines of communication with the Maryland Motor Truck Association, Longshoreman's Association, Customs and Border Protection and United States Coast Guard all are very effective ways to eliminate unnecessary and unwarranted delays in the processing of trucks.

Chart 5.1B.1: Average Annual Truck Turnaround Time per Unit (Box) at Seagirt Marine Terminal FY2013-FY2017



#### TANGIBLE RESULT DRIVER:

Phil Sullivan

Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Jeffrey Gutowski

Maryland Port Administration (MPA)

#### **PURPOSE OF MEASURE:**

To assess average wait time at MVA facilities.

#### FREQUENCY:

Quarterly

#### DATA COLLECTION METHODOLOGY:

Verification of average wait times at MVA facilities for services.

#### **NATIONAL BENCHMARK:**

N/A

#### PERFORMANCE MEASURE 5.1C

# Reliability of the Transportation Experience: Average Wait Time (MVA)

MDOT customers expect reasonable wait times to obtain needed services and products. For performance measure 5.1C, the reliability of customer transportation experiences was assessed through monitoring of average wait times at MVA facilities. The data will be reported and reviewed quarterly.

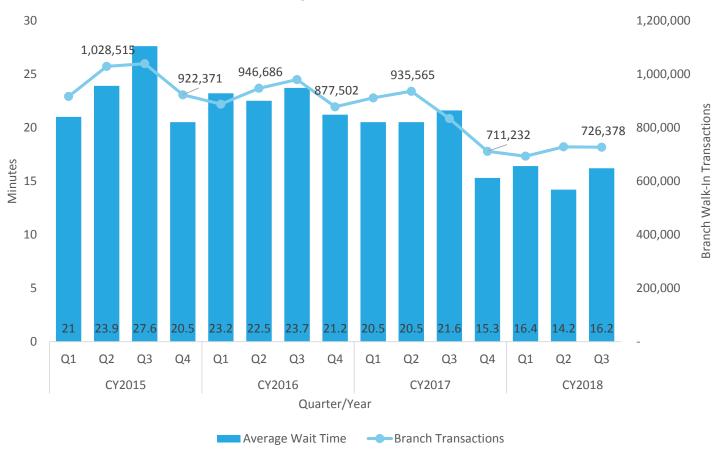
Currently, the MVA reports the average wait time for customers to obtain services and products at all branch offices. The statewide average wait time goal is 14.8 minutes. In the Q3 CY2018 reporting period, MVA average statewide wait time was 16.2 minutes. The average total wait time for the calendar year to date is 15.6 minutes.

In addition to pre-screening customers for immediate service at kiosks, redesigned email renewal notices, tablets for customers to use at each MVA branch, and vision screening stations at branch locations, the MVA recently implemented the ability to handle insurance violations either online or at an in-branch kiosk. As a result, the MVA continued to move more transactions to alternative services.

#### PERFORMANCE MEASURE 5.1C

Reliability of the Transportation Experience: Average Wait Time (MVA)





#### TANGIBLE RESULT DRIVER:

Phil Sullivan

Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Kokuei Chen

Maryland Transit Administration (MTA)

#### **PURPOSE OF MEASURE:**

To assess the percent of on-time performance of our transportation service by mode to ensure a more reliable transportation experience for our customers.

#### FREQUENCY:

Quarterly

#### DATA COLLECTION METHODOLOGY:

Varies by mode. Most modes use GPS tracking to compare performance to the schedule and in a few cases field observations are used to assess reliability.

#### **NATIONAL BENCHMARK:**

Per APTA Standards Modal OTP benchmarks are as follows:

Bus – 78 percent

Rail - 90 percent

Paratransit – 92 percent

#### PERFORMANCE MEASURE 5.1D

## Reliability of the Transportation Experience: On-Time Performance (MTA & MAA)

Reliability of transportation services is important to MDOT customers. Many rely on posted arrival and departure times to make needed connections and for critical appointments. This measure will allow the TBUs to focus resources where needed to improve on-time performance.

The public timetable has been referred to as "our contract with our riders." On-Time Performance (OTP) is the measurement of our adherence to that contract. Maintaining a high level of OTP is of critical importance when providing ground transportation.

Whether a customer has a one-seat ride or needs to make a complex intermodal connection, the rider has an expectation that services will be provided reliably and as scheduled. MTA and MAA schedule adherence drives not only customer perception of the service we provide, but our efficient use of taxpayer dollars, management processes, and the efficiency and reliability of State government.

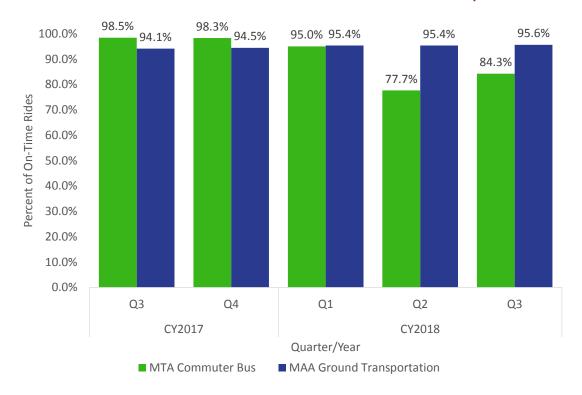
As an organization, MDOT continues to strive to meet or exceed APTA benchmarks for OTP across bus (78 percent), rail (90 percent), and paratransit (92 percent) modes. Our commitment to continual OTP improvement is evident in our efforts to provide a transit network that allows passengers to travel more efficiently throughout our service area utilizing schedules that accurately reflect passenger travel times. This drives down service related complaints and results in a better passenger experience.

As of April, 2018, new GPS tracking units have been installed on all MTA core buses. The new GPS units and the associated software is replacing less robust passenger counting system that had been used to calculate MTA core bus on time performance. The MTA core bus system contains three services: CityLink, LocalLink, and ExpressLink. LocalLink and ExpressLink service uses a schedule adherence system (with a two minute early, seven minute late window) to calculate "On Time" percentage while CityLink service uses a headway system (with an advertised headway + five minutes window) to calculate "On Time" percentage.

#### PERFORMANCE MEASURE 5.1D

Reliability of the Transportation Experience: On-Time Performance (MTA & MAA)

Chart 5.1D.1: On-Time Performance of MTA Commuter Bus and MAA Ground Transport CY2017-CY2018



#### PERFORMANCE MEASURE 5.1D

Reliability of the Transportation Experience: On-Time Performance (MTA & MAA)

Chart 5.1D.2: On-Time Performance of MTA SubwayLink, Light RailLink, and MARC CY2017-CY2018

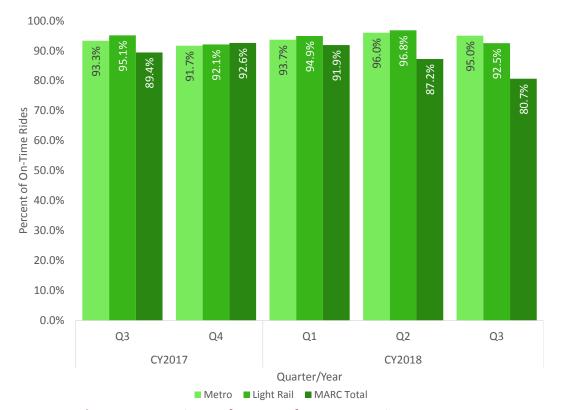


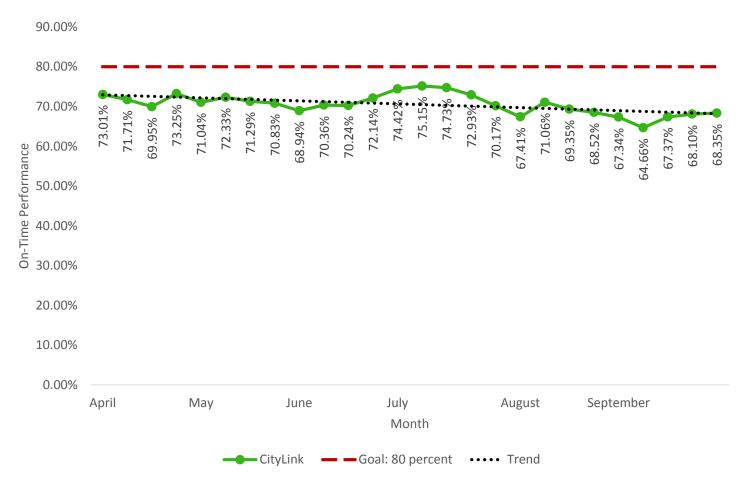
Chart 5.1D.3: On-Time Performance of MTA Paratransit CY2017-CY2018



#### PERFORMANCE MEASURE 5.1D

Reliability of the Transportation Experience: On-Time Performance (MTA & MAA)

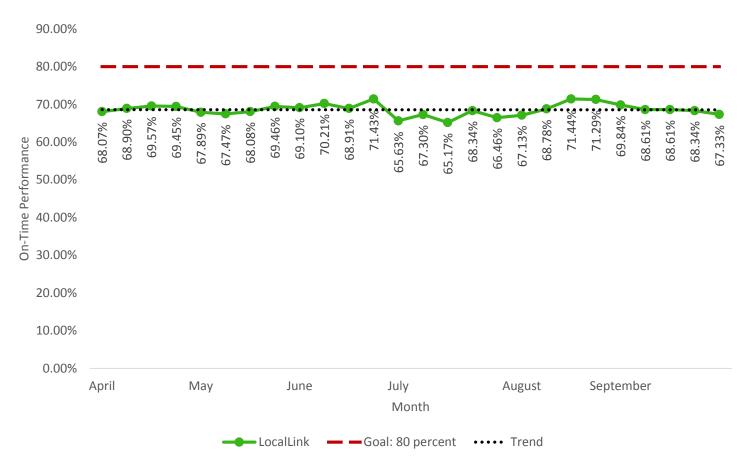
Chart 5.1D.4: CityLink (All Lines) Weekly Headway Performance CY2018



#### **PERFORMANCE MEASURE 5.1D**

Reliability of the Transportation Experience: On-Time Performance (MTA & MAA)

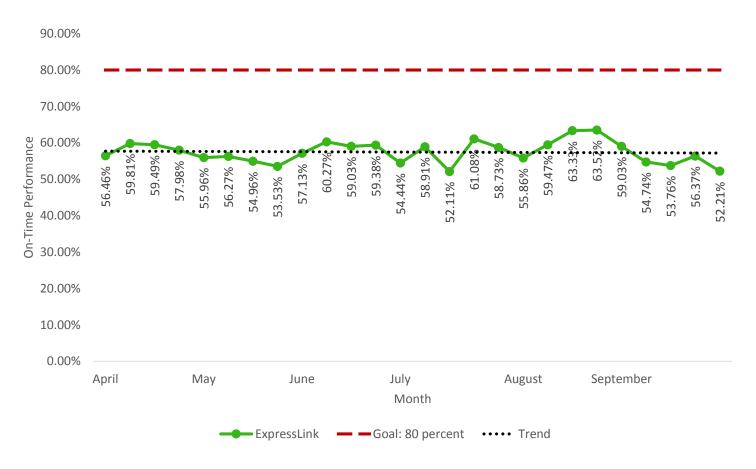
Chart 5.1D.5: LocalLink (All Lines) Weekly Headway Performance CY2018



#### **PERFORMANCE MEASURE 5.1D**

Reliability of the Transportation Experience: On-Time Performance (MTA & MAA)

Chart 5.1D.6: ExpressLink (All Lines) Weekly Headway Performance CY2018



#### TANGIBLE RESULT DRIVER:

Phil Sullivan
Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Meredith Hill State Highway Administration (SHA)

#### **PURPOSE OF MEASURE:**

To provide customers with a gauge by which to assess travel time reliability on the State's highway system.

#### FREQUENCY:

Annually (in April)

DATA COLLECTION METHODOLOGY: Formula based.

#### NATIONAL BENCHMARK:

A Planning Time Index (PTI) which is <1.5 for 80th percentile travel time.

Maryland uses 95th percentile travel time for reliability.

#### **PERFORMANCE MEASURE 5.1E**

Reliability of the Transportation Experience: Planning Time Index for Highway Travel

Customers want reliable travel times when traveling on Maryland's highway system. The planning time index (PTI) is a metric that gauges the reliability of travel times on heavily used freeways and expressways during peak congestion.

For example, if a trip during uncongested, free-flowing traffic conditions takes a traveler 15 minutes; a PTI of 2.0 would indicate that the same trip during a heavily congested period could be expected to take up to 30 minutes. MDOT uses the following PTI ranges to describe the varying degrees of travel time reliability:

PTI < 1.5 = Reliable 1.5 < PTI < 2.5 = Moderately Unreliable PTI > 2.5 = Extremely Unreliable

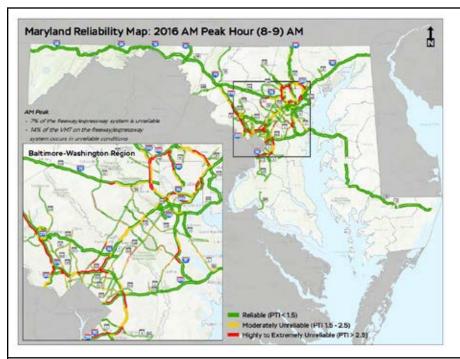
In 2016, travel time on 7 percent (AM Peak) to 12 percent (PM Peak) of the freeways and expressways was assessed as "extremely unreliable" during congested periods on an average weekday. This was an improvement over 2015 travel times by 1 and 2 percent, respectively.

When compared to 2015, the 2016 travel reliability results improved despite an increase of 2.9 percent in VMT. Capacity improvements, CHART's response to incidents, and increased use of projects such as the InterCounty connector support the improvement.

Changes to the PTI that result from completed highway projects are reflected in the PTI analysis over time. For example, the I-95 Express Toll Lane project in Baltimore opened in December 2014. Before the I-95 Express Toll Lanes were built the freeway operated under moderately to extremely unreliable conditions (PTI >2.5). Since the completed construction, the freeway operates as a reliable facility (PTI <1.5).

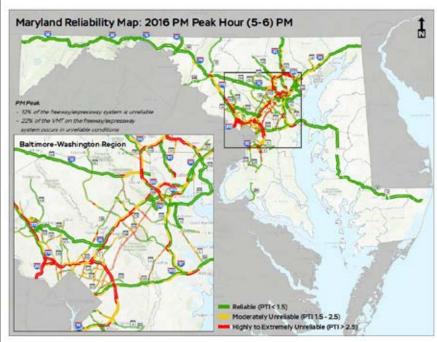
#### PERFORMANCE MEASURE 5.1E

### Planning Time Index for Highway Travel



When compared to 2015, motorists in the AM Peak hour experienced a 1 percent ↓ in the number of freeway and expressway miles with a PTI > 2.5.

This amounts to a 4 percent ↓ in VMT that occurred in extremely unreliable conditions.



When compared to 2015, motorists in the PM Peak hour experienced a 2 percent ↓ in the number of freeway and expressway miles with a PTI > 2.5.

This amounts to a 4 percent ↓ in VMT that occurred in extremely unreliable conditions.

Source: 2017 Maryland State Highway Mobility Report

#### TANGIBLE RESULT DRIVER:

Phil Sullivan
Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Joseph Sagal

State Highway Administration (SHA)

#### **PURPOSE OF MEASURE:**

To understand the impact on efficiency of quickly restoring transportation services after incidents for customers.

#### FREQUENCY:

Annually (in April)

#### DATA COLLECTION METHODOLOGY:

The methodology involves an analysis of operational records collected in real-time, and results are contingent on the scale, number and types of incidents causing disruptions.

#### NATIONAL BENCHMARK:

North Carolina – 75 minutes

Connecticut – 45 minutes

Iowa – 53 minutes

Minnesota – 35 minutes

Missouri – 25.3 minutes

New Jersey – 43 minutes

#### PERFORMANCE MEASURE 5.2A

# Restoring Transportation Services: Average Time to Restore Normal Operations After Disruptions

MDOT's customers expect a safe, well-maintained, efficient and reliable transportation system with minimal disruption to travel. Rapid response to effectively manage and clear incidents that disrupt highway travel is one strategy that is essential in meeting these expectations. Efforts to improve coordination and cooperation among TBUs and emergency responders facilitate the reduction in response times and the overall average incident duration, restoring travel more quickly for our customers. The "average incident duration" is a measure of the time it takes a response unit to arrive, plus the elapsed time between the arrival of the first unit and the time stamp in the CHART advanced traffic management system noting the restoration of normal operating conditions.

As shown in chart 5.2A.1, the average incident duration between CY2010 and CY2015 has consistently been less than 30 minutes, and has been less than the lowest benchmark value (25.3 minutes – Missouri) for the last five years (2012 – 2016). The slight increase in average incident duration in calendar years 2015 and 2016 is likely due to the addition of overnight and weekend patrol hours. During the night and weekend hours, most incidents tend to take a slightly longer time to clear than they would during weekdays, since emergency responding agencies operate at reduced staffing levels, or depend on "on-call" staff. However, performance measures show that night and weekend patrols have a significant positive impact on reducing travel delays.

#### PERFORMANCE MEASURE 5.2A

# Restoring Transportation Services: Average Time to Restore Normal Operations After Disruptions

The primary strategies for improving Traffic Incident Management focus on assuring that emergency responders have well established coordination procedures, effective communications, thorough training and the resources available to address any type of incident. Just some of the current efforts to implement these strategies in Maryland include:

- MDOT is leading three Initiatives to improve coordination with the Maryland State Police (MSP) including:
  - o Formalizing working relationships with the heavy tow industry, including a performance incentive program;
  - o Organizational modifications to better support inter-agency coordination between MSP and MDOT; and
  - o Enhancing data collection on reported crashes, including the identification of preventable secondary incidents.
- Supporting the deployment of the Maryland First radio system statewide to improve inter-agency emergency communication.
- Standardized Incident Management training, to raise the level of emergency preparedness and safety of emergency responders, who manage incidents on the transportation system.

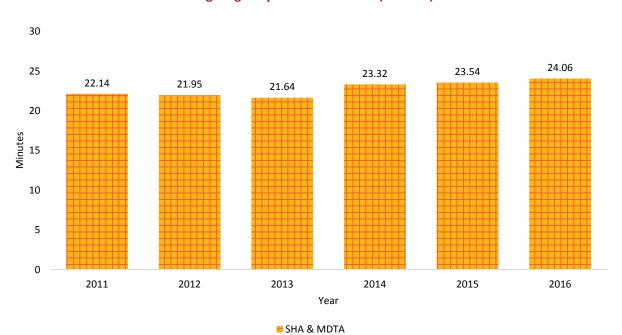


Chart 5.2A.1: Average Highway Incident Duration (minutes) CY2011-CY2016

#### TANGIBLE RESULT DRIVER:

Phil Sullivan

Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Joseph Sagal

State Highway Administration (SHA)

#### **PURPOSE OF MEASURE:**

To understand the impact on efficiency of quickly restoring transportation services after weather events.

#### **FREQUENCY:**

Annually (in April)

#### DATA COLLECTION METHODOLOGY:

The methodology involves an analysis of operational records collected in real-time, and results are contingent on the scale, number and types of weather events.

#### NATIONAL BENCHMARK:

Minnesota – 3 hours

Washington, DC - 18 hours

Missouri – 3.8 hours

#### **PERFORMANCE MEASURE 5.2B**

Restoring Transportation Services: Average Time to Restore Normal Operations After a Weather Event

Disruptions in travel due to inclement weather (snow, ice, etc.) require specialized operations experience and rapid response to restore normal operating conditions. To better understand the performance during winter storms, MDOT collects data on the "average time to restore normal operations after weather events." The performance measure is calculated by identifying the lapse in time from the ending of frozen precipitation in a maintenance shop's area of responsibility and the occurrence of bare (wet or dry) pavements on highways.

As shown in chart 5.2B.1, the average time to restore normal operations after weather events for the years 2012 through 2015 was consistently less than the benchmark value (3.8 hours –Missouri). The Average Time to Restore Normal Operations after a Weather Event increased to 6 hours in FY2016, mostly due to the impacts of Winter Storm Jonas which occurred over the period of January 22-24, 2016. Recognizing that a large winter event such as Jonas presented unique challenges, MDOT initiated a major after-action initiative, which identified 30 tasks for improving Maryland's winter storm preparedness. Some of the major tasks included:

- Compiling and maintaining winter storm emergency contact lists;
- Updating emergency procurement procedures for obtaining necessary resources (e.g. food, lodging and supplies) during major weather events;
- Developing the capability of displaying automated emergency weather warning for programmable highway message signs;
- Identifying resources for transporting personnel during heavy snow conditions; and
- Documenting and distributing lists of "pre-identified" snow disposal areas.

#### PERFORMANCE MEASURE 5.2B

# Restoring Transportation Services: Average Time to Restore Normal Operations After a Weather Event

All after-action tasks were accomplished between February 2016 and October 2016. In 2017, the average time returned to 3.93 hours, close to the benchmark and within the SHA target average of 4.0 hours. Another major action item was to incorporate contracts for private, heavy-tow services under the emergency snow removal procurement regulations. These services are used to recover and relocate trucks stranded in the snow from traveled lanes, to maintain a clear roadway and facilitate overall snow removal efforts.

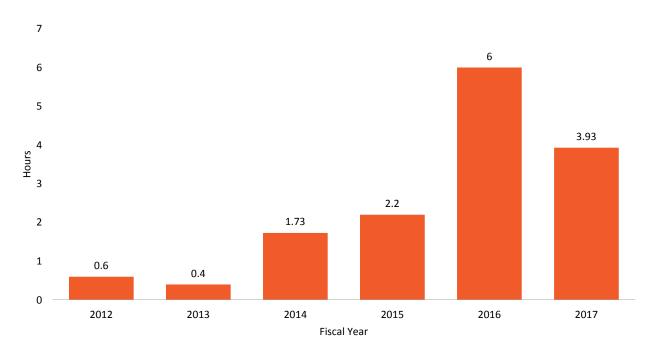


Chart 5.2B.1: Time to Regain Bare Pavement After Snow (hours) FY2012-FY2017

#### TANGIBLE RESULT DRIVER:

Phil Sullivan

Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Negash Assefa

Motor Vehicle Administration (MVA)

#### **PURPOSE OF MEASURE:**

To measure percentage of services through alternate methods other than in-person visit as an indicator of easy and reliable access to MDOT services and products.

#### **FREQUENCY:**

Semi-Annually (in April and October)

#### DATA COLLECTION METHODOLOGY:

Formula accounts for total customer transportation services and products compared to those acquired by alternate methods.

#### **NATIONAL BENCHMARK:**

FY2018 - 68%

#### PERFORMANCE MEASURE 5.3

Percent of Transportation Services and Products Provided Through Alternative Service Delivery (ASD) Methods

MDOT strives to provide premier customer service by offering easy and reliable access to transportation services and products. A 2015 Pew Research Center study, shows 42 percent of Americans use the internet to get government services and/or information and 22 percent use the internet to make or receive payments. Considering the projected increase in use of smart phones, it is estimated that a stretch goal of up to 68 percent of MDOT customers have the potential to complete transactions at their leisure perhaps even without having to visit MDOT offices.

MDOT's Service Delivery Channel (SDC) for ASD includes Web, KIOSK, call center/IVR and mail-in. For the Q3 CY2018, MDTA, MTA, MVA, SHA, TSO and MPA combined achieved a 71.3% ASD transactions and a record 70.1% for the previous three quarters combined. This reflects 17.9 million out of 25.6 million eligible transactions completed using ASD.

The strategy to grow ASD continues to include marketing to effect behavior change, looking for services to be added to ASD and capturing services that may not be reported.

#### **PERFORMANCE MEASURE 5.3**

Percent of Transportation Services and Products Provided Through Alternative Service Delivery (ASD) Methods









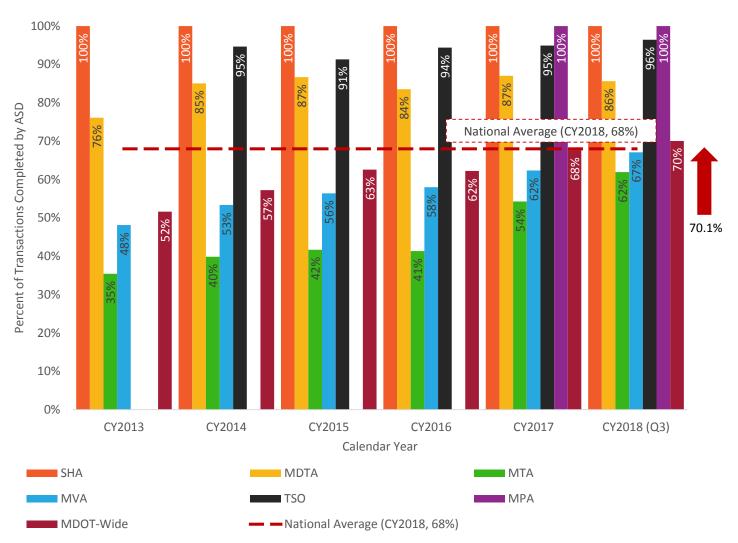




#### **PERFORMANCE MEASURE 5.3**

Percent of Transportation Services and Products Provided Through Alternative Service Delivery (ASD) Methods

Chart 5.3.1: Alternative Service Delivery by TBU CY2013-Q3 CY2018



#### TANGIBLE RESULT DRIVER:

Phil Sullivan
Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Ralign T. Wells
Maryland Aviation Administration
(MAA)

#### PURPOSE OF MEASURE:

To assess the functionality and value of real-time signage and information systems offered.

#### FREQUENCY:

Annually (in January).

#### DATA COLLECTION METHODOLOGY:

Sampling of real-time signage or IVR systems to determine a percentage of functionality.

Survey users to assess their opinion of usefulness and satisfaction with Real-Time Information Systems.

#### **NATIONAL BENCHMARK:**

85%-90% Functionality<sup>1</sup>

<sup>1</sup> According to Clever Devices, Industry experts on Real-Time Information technologies.

#### PERFORMANCE MEASURE 5.4A

### Percent of Functional Real-Time Information Systems Provided

MDOT's customers benefit from "real-time" information systems installed throughout the transportation network offering travelers the most accurate and up-to-date information available. These systems help customers prepare for and manage their time while using statewide transportation services.

Currently, all TBUs have processes in place to ensure that any system failures are immediately addressed to ensure near 100 percent functionality at any given time. Systems will continually be monitored to ensure continued "up-time" performance of these systems.



#### PERFORMANCE MEASURE 5.4A

Percent of Functional Real-Time Information Systems Provided

Chart 5.4.1: Percent of Functional Real-Time Information Systems Provided Q3 CY2017- Q2 CY2018

TBU	Q3 CY2017	Q4 CY2017	Q1 CY2018	Q2 CY2018
MVA Wait Time	100%	100%	100%	100%
MTA Mobility	100%	100%	100%	100%
MTA Bus Tracker	100%	100%	100%	100%
MTA MARC Tracker	99.4%	100%	99.5%	99.5%
MTA Light Rail	100%	100%	100%	100%
MAA Flight Info	100%	100%	100%	100%
MAA NVA	97%	91%	95%	94%
CHART (SHA)	98.90%	99.48%	99.04%	99.15
CHART (MDTA)	98.66%	98.5%	96%	98.33

100% <100% <90%

#### TANGIBLE RESULT DRIVER:

Phil Sullivan

Maryland Transit Administration (MTA)

#### PERFORMANCE MEASURE DRIVER:

Ralign T. Wells
Maryland Aviation Administration
(MAA)

#### **PURPOSE OF MEASURE:**

To assess the functionality and value of real-time signage and information systems offered.

#### FREQUENCY:

Annually for customer satisfaction (in July).

#### DATA COLLECTION METHODOLOGY:

Survey users to assess their opinion of usefulness and satisfaction with Real-Time Information Systems.

#### **NATIONAL BENCHMARK:**

85%-90% Functionality<sup>1</sup>

#### PERFORMANCE MEASURE 5.4B

## Customer Satisfaction with Helpfulness and Accuracy of Real-Time Systems Provided

MDOT customers of MTA, MVA, MAA, SHA and MDTA, benefit from "real-time" information systems installed throughout the transportation network offering users the most accurate information. This helps them prepare for and manage their time while using statewide transportation services.

It is important to understand how customers feel about the accuracy and usefulness of those systems to ensure that adjustments are made to these systems.

MTA offers real-time information systems for most of its modes of transportation. Due to MTA's ongoing improvement efforts, surveys on helpfulness and accuracy indicate a significant increase in customer satisfaction over the previous year.

SHA and MDTA (CHART) have DMS signage throughout the State, which continues to recognize over 95% customer satisfaction with both usefulness and accuracy of those systems since 2017.

Table 5.4B.1: MVA Wait Time Website CY2018

	SATISFIED	NOT SATISFIED
Satisfaction with the helpfulness of wait time information	73%	27%
Satisfaction with the accuracy of wait time information	65%	35%

Table 5.4B.2: MTA Customer Satisfaction with Helpfulness and Accuracy of Core Bus Tracker System CY2018

	SATISFIED	NOT SATISFIED
Satisfaction with the helpfulness of wait time information	80%	20%
Satisfaction with the accuracy of wait time information	72%	28%

<sup>&</sup>lt;sup>1</sup> According to Clever Devices, Industry experts on Real-Time Information technologies.

#### PERFORMANCE MEASURE 5.4B

Customer Satisfaction with Helpfulness and Accuracy of Real-Time Systems Provided

Table 5.4B.3 MTA Customer Satisfaction with Helpfulness and Accuracy of Light Rail Next Train Arrival System

CY2018

	SATISFIED	NOT SATISFIED
Satisfaction with the helpfulness of wait time information	83%	17%
Satisfaction with the accuracy of wait time information	82%	18%

#### Table 5.4B.4 MTA Customer Satisfaction with Helpfulness and Accuracy of MARC Next Train Arrival System CY2018

	SATISFIED	NOT SATISFIED
Satisfaction with the helpfulness of wait time information	75%	25%
Satisfaction with the accuracy of wait time information	72%	28%

#### Table 5.4B.5 MTA Customer Satisfaction with Helpfulness and Accuracy of Commuter Bus Tracker System CY2018

	SATISFIED	NOT SATISFIED
Satisfaction with the helpfulness of wait time information	75%	25%
Satisfaction with the accuracy of wait time information	69%	31%

#### Table 5.4B.6 CHART (SHA &MDTA) Customer Satisfaction with Helpfulness and Accuracy of DMS CY2018

	SATISFIED	NOT SATISFIED
Satisfaction with the helpfulness of wait time information	94%	6%
Satisfaction with the accuracy of wait time information	96%	4%